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(54) Abstract Title

An LED based on a two well system with charge asymmetric resonance tunnelling

(57) An LED for example, a GaN, GaAs, ZnSe or AlGaInP based LED, comprises a two well system with charge asymmetric resonance tunnelling. The two wells form first and second coupled wells. One well is a wide well and the other is an active quantum well. The wells are coupled via a resonance tunnelling barrier which is transparent for electrons and blocking for holes. The active well may be a multiple quantum well (MQW) structure. The wide well may be a simple undoped electron emitting layer, or an MQW. The buffer layer may be a strained superlattice. A p-contact may be made from GaN, p-Al_xGa_{1-x}N or p-type polycrystalline GaN. The p-layer may be codoped using one or both of Mg and Al. The substrate can be removed by wet etching or laser ablation.

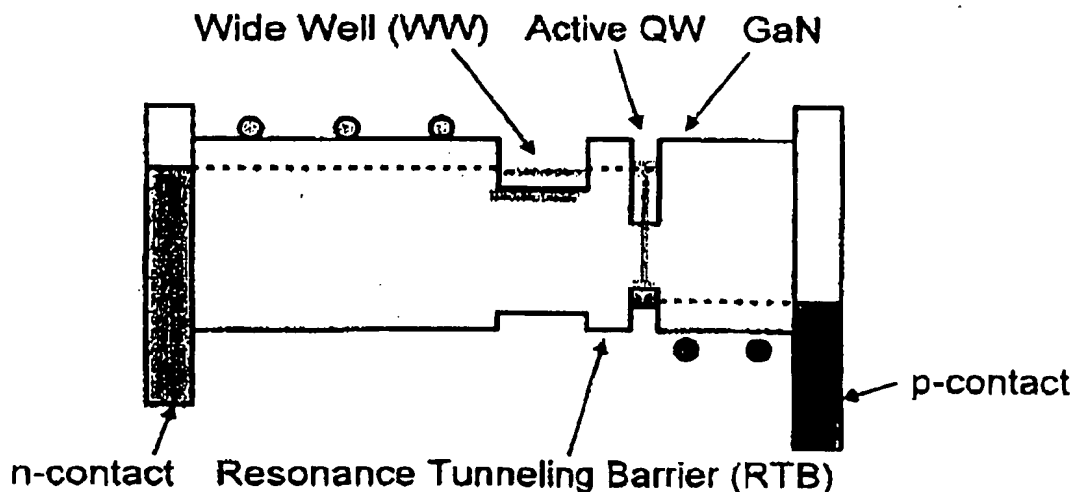


FIG. 2